Amendments to the Specification:

Please replace paragraph [0027] with the following amended paragraph:

[0027] Also, some embodiments of the invention heat the substrate to a temperature above 300°C during the ALD process (steps 32, 34, 36, 38, 40[[-40]]) while other embodiments of the invention heat the substrate to a temperature between about 300-800°C during the process. The inventors have found that at such increased temperatures multiple layers of silane molecules are adsorbed onto the surface of the substrate during the first stage of the ALD process which can then be converted to multiple layers of silicon oxide during the second stage. This allows the ALD process to proceed at a considerably higher deposition rate than single layer ALD processes.

Please replace paragraph [0029] with the following amended paragraph:

[0029] One example of such an embodiment is set forth in Fig. [[2]]3A which shows that after each pulse 50 of silane, no gas flow is introduced into the chamber for a time period represented by reference number 52 before the substrate is exposed to a pulse 54 of oxygen radicals.

Please replace paragraph [0030] with the following amended paragraph:

[0030] Other embodiments purge residual silane out of the chamber between the first and second stages by flowing a gas that is chemically inert to the silica glass forming reactants used in the first and second stages as shown in Fig. [[2]]3B. In Fig. [[2]]3B, a flow of helium 60 is introduced into the chamber after exposing the substrate to silane molecules (pulse 50) and prior to exposing the substrate to oxygen radicals (pulse 5[[2]]4). In other embodiments purge gases other than helium may be used including, for example, molecular hydrogen and/or argon among others. In still other embodiments, the silicon source can be purged by a flow of helium or another appropriate chemically inert gas that is maintained throughout the ALD sequence as shown in Fig. [[2]]3C.

Please replace paragraph [0031] with the following amended paragraph:

[0031] In still other embodiments, the silicon source is purged by a flow of oxygen that is maintained continuously during both the first and second stages of the ALD process as shown in Fig. [[2]]3D. In these embodiments, chamber conditions are kept such that the combination of

silane and oxygen in the first stage do not react in the gas phase to produce an oxide film. Instead, the silane flow 50 is alternated with the application of energy 62 to form reactive radicals from the oxygen flow 64. During the stage where silane and oxygen are introduced into the chamber together without the dissociation of the gases, silane molecules are adsorbed onto the surface of the layer. Then, when silane flow is stopped the oxygen flow purges residual silane from the chamber. Afterwards, reactive oxygen radicals are formed from the flow of oxygen and the oxygen radicals convert the absorbed silane molecules to silicon oxide.

Please replace paragraph [0037] with the following amended paragraph:

[0037] Table 1 below lists the process parameters that can be used in ALD silica glass deposition process (one cycle) according to one exemplary embodiment of the present invention. In the table, stage 1 is the first portion of the ALD cycle where silane is adsorbed on the surface of the substrate and stage 2 is the later part of the ALD cycle where the adsorbed silane is converted to silica glass. Additional steps can be included in the ALD cycle to add a dopant gas and/or to evacuate or purge the chamber of selected gases between the various ALD stages as discussed above.

EXEMPLARY RANGES FOR ALD PROCESS PARAMETERS		
Parameter	**Stage 1 Value**	**Stage 2 Value**
RF Power	---	10-1000 W
Bias Power	---	10-1000 W
Pressure	60-100 mTorr	2-100 mTorr
Temperature	300-800°C	300-800°C
SiH_4	10-100 sccm	---
O_2	0-100 sccm	10-100 sccm
He or H_2	0-100 sccm	0-100 sccm

~~TABLE 2~~**TABLE 1**